YR-1000

SERVICE MANUAL

AEP Model

SPECIFICATIONS

Inputs/outpus

INPUT

S video input	4-pin mini DIN (1)
Video input	Phono jack (1)
Audio inputs	Phono jack (2)

AV OUT 21-pin cable

Others

Power requirements
220 V AC, 50 Hz (European model)
240 V AC, 50 Hz (Model for the United Kingdom)

Power consumption
7 W

Dimensions 196 × 65 × 184 mm (w/h/d) ($7^{3}/_{4} \times 2^{5}/_{8} \times 7^{1}/_{4}$ inches)

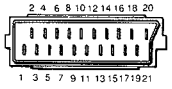
Weight Approx. 1.5 kg (3 lb 5 oz)

Pin assignment

S VIDEO input connector

① Chrominance signal (C)
② Luminance signal (Y)
③ Ground
④ Ground

AV OUT cable (21-pin connector)



Pin No.	Signal	Signal level
1	Open	
2	Audio output B (right)	0.5 V, 80% modulation (AM/FM) Less than 1 kilohm
3	Open	
4	Ground (audio)	
5	Ground (blue)	
6	Audio output A (left)	0.5 V, 80% modulation (AM/FM) Less than 1 kilohm
7	Blue	0.7 V, 75 ohms, positive
8	Function select (AV control)	High state (9.5 – 12 V) Low state (0 – 2 V) Input impedance: More than 10 kilohms Input capacitance: Less than 2µF
9	Ground (green)	
10	Open	
11	Green	(Same as Pin 7)
12	Open	
13	Ground (red)	
14	Ground (blanking)	
15	Red	(Same as Pin 7)
16	Blanking	High state (1 – 3 V) Low state (0 – 0.4 V) 75 ohms
17	Open	
18	Ground (video output)	
19	Open	
20	Video output	1 Vp-p, 75 ohms, positive
21	Common ground (plug, shield)	

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

S-RGB TRANSCODER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splasher and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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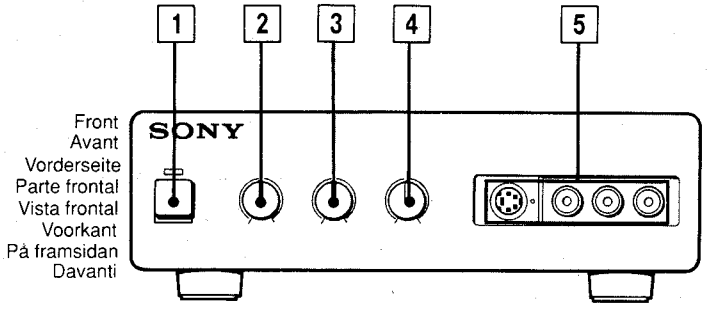
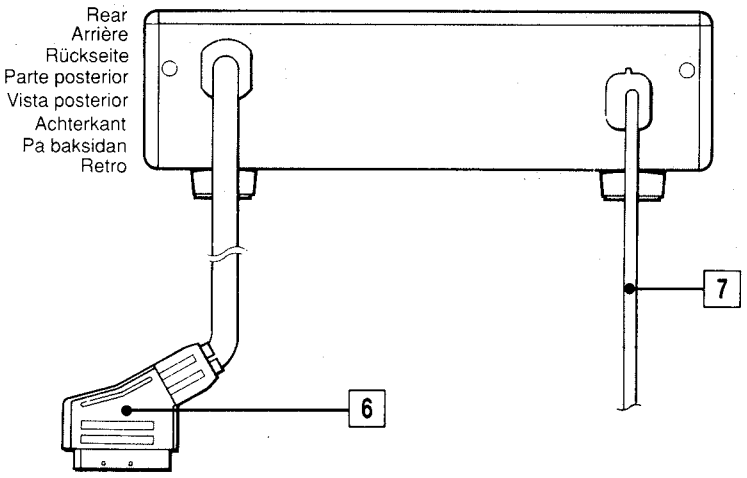
SECTION 1
GENERAL





Location and Function of Controls

[1] **POWER switch**

[2] **BRIGHT (brightness) control**
Turn toward MAX to make the picture brighter, or toward MIN to make it darker. Normally set to the center indented position.

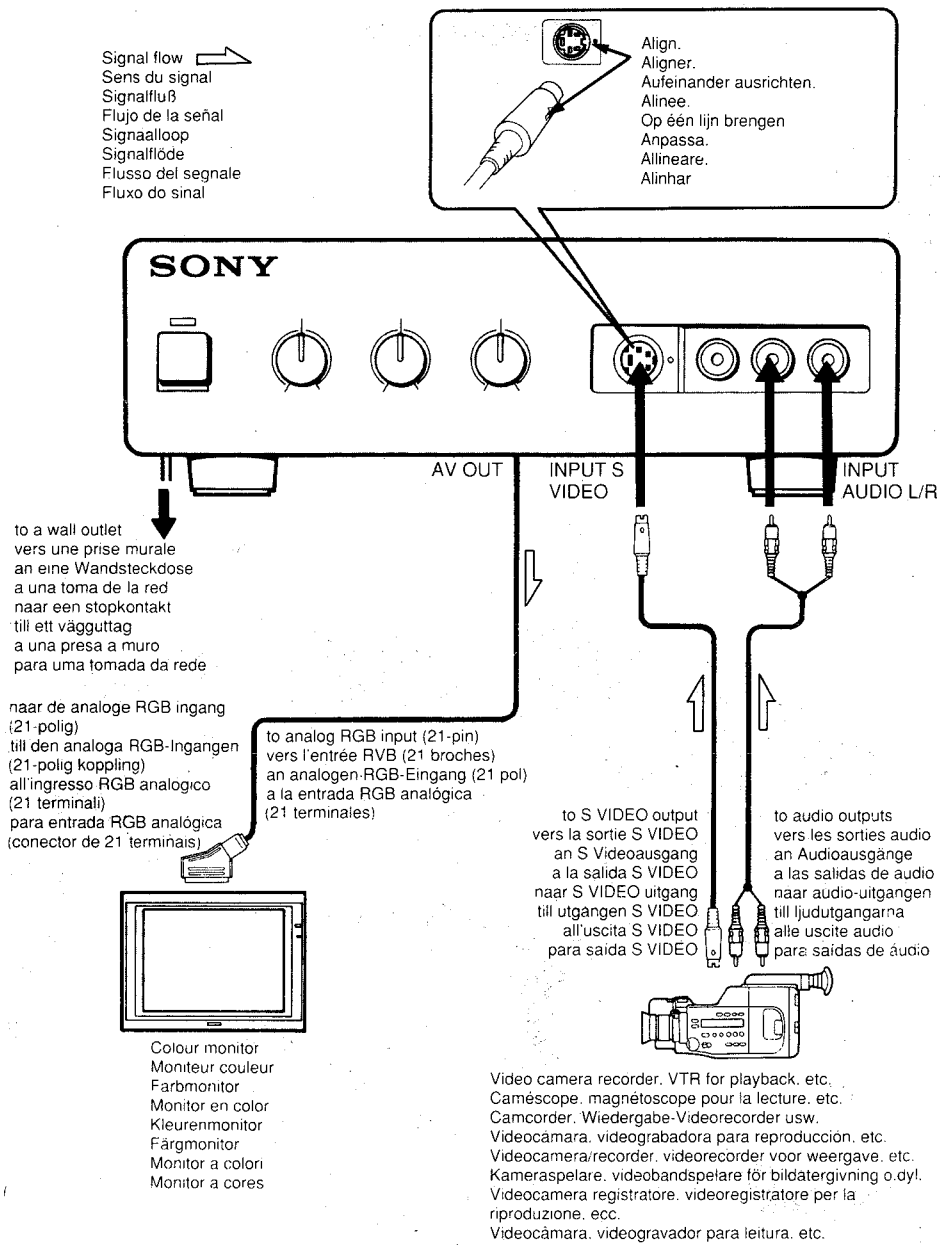
[3] **COLOUR control**
Turn toward MAX to make the colour intensity vivid, or toward MIN to make it pale. Normally set to the center indented position.

[4] **PICTURE control**
Turn toward MAX to make the picture contrast, colour intensity and brightness stronger, or toward MIN to make them weaker. Normally set to the center indented position.

[5] **INPUT connectors**
Connect to the video/audio outputs of the input source equipment such as video camera recorder, VTR for playback, etc.
- When plugs are inserted into both the S VIDEO connector and the VIDEO jack simultaneously, the VIDEO jack is disconnected automatically.

[6] **AV OUT cable (21-pin)**
Connect to the analog RGB input of a colour monitor. When the colour monitor is connected to this cable, set the input selector of the colour monitor to RGB.

[7] **Power cord**



Connections

Notes on Operation

If noise occur in the picture or sound
Move the equipments further away from each other.

When the colour monitor is connected to the AV OUT cable and this unit is turned on
The picture adjustment controls on the colour monitor become inoperative. Adjust the picture with the picture adjustment controls of this unit.

If you make the picture search during playback, fast-forward or rewind with this transcoder connected
The picture may be black and white or the picture may shake vertically.

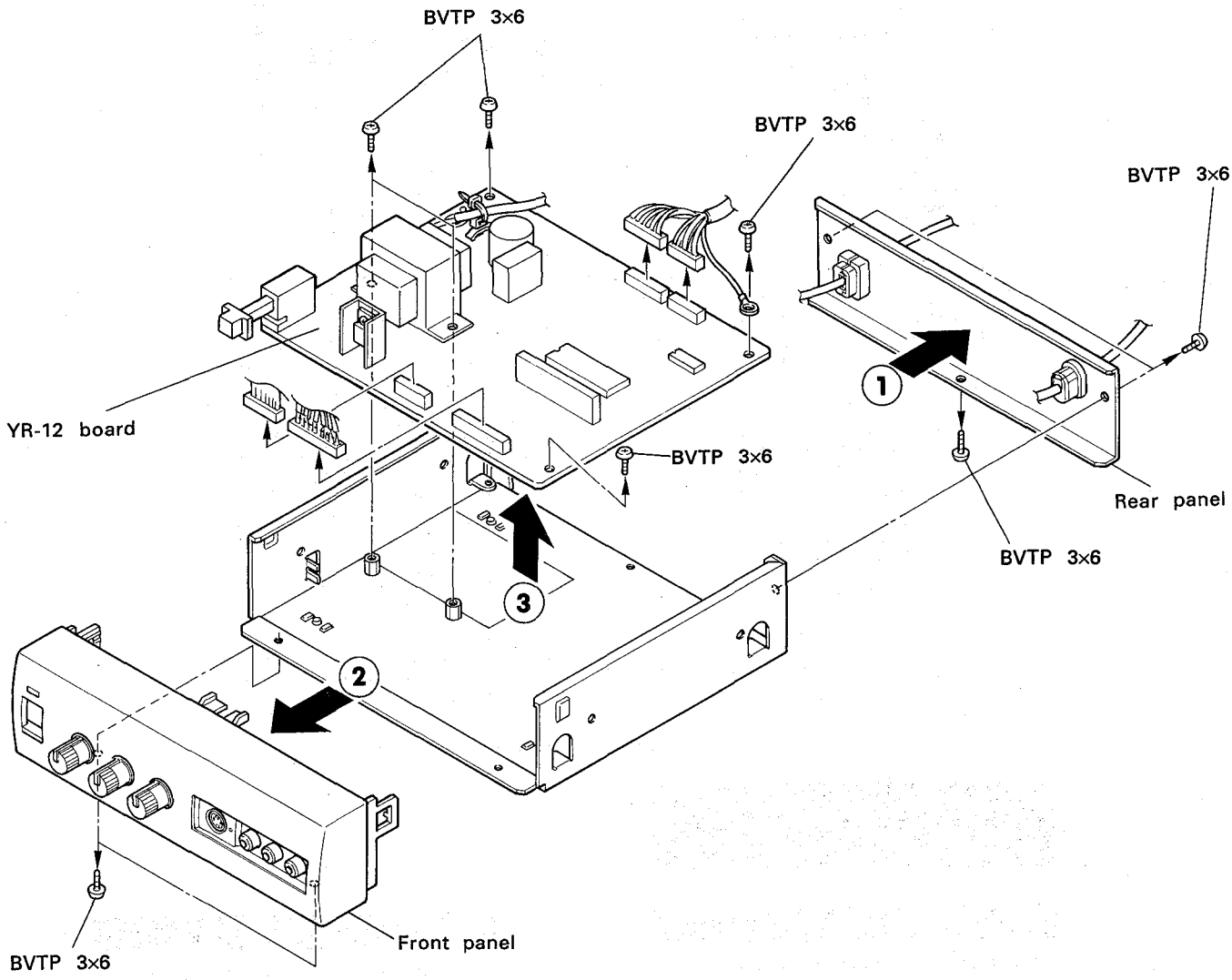
Notes on Connection

- Before connecting, be sure to turn off all equipment.
- Insert plugs securely, as loose connections may cause hum and noise.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- To avoid interference, turn off equipment not in use.
- If the input source equipment is not equipped with an S VIDEO connector make the connection through the phono-type VIDEO jacks using a video connecting cord with phono plugs.
- For details of connections, refer to the instruction manual of each equipment.

SECTION 2
DISASSEMBLY

UPPER CASE
Remove four screws at both side.

DISASSEMBLY PROCEDURE
① Removal of rear panel
② Removal of front panel
③ Removal of YR-12 board



SECTION 3
THEORY OF OPERATION

3-1. Y/C SEPARATOR BLOCK

COMPOSITE VIDEO signal entered into VIDEO input terminal (FRONT PANEL, RCA PIN TYPE (Yellow)) is applied to Pins ⑤ and ③ of IC102 in which the signal is amplified by about +6dB, and then Y/C separated via CHROMA B.P.F. or CHROMA TRAP.

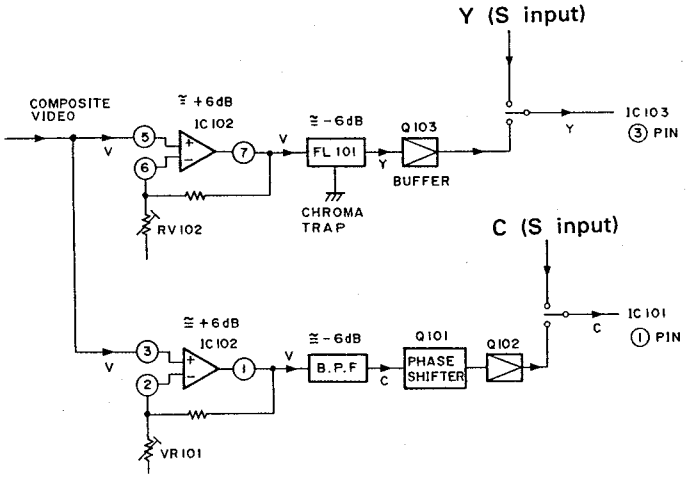
3-1-1. Y (LUMINANCE) system

COMPOSITE VIDEO signal entered into Pin ⑤ of IC102 is filtrated by CHROMA TRAP in next stage to remove CHROMA components. However, the LEVEL attenuates -6dB in this TRAP, so the signal is amplified by +6dB beforehand.
Amplified COMPOSITE VIDEO signal is output from Pin ⑦ of IC102 and converted to Y (LUMINANCE) signal in CHROMA TRAP FL101 and then entered into Pin ③ of IC103 via BUFFER Q103 and input changeover switch (to change over S input and COMPOSITE VIDEO input).
In addition, LEVEL difference of the signal is adjusted in RV102 so that there is no LEVEL difference between Y signal of S input and Y signal after separating Y/C.

3-1-2. C (CHROMA) system

COMPOSITE VIDEO signal entered into Pin ③ of IC102 is filtrated by CHROMA B.P.F. BLOCK in next stage to remove only CHROMA components. However, LEVEL attenuates -6dB in this CHROMA B.P.F. BLOCK, so the signal is amplified +6dB beforehand.
Amplified COMPOSITE VIDEO signal is output from Pin ① of IC102 and converted to C (CHROMA) signal via CHROMA B.P.F. BLOCK while DELAY difference created by the CHROMA TRAP in the Y system being compensated in the PHASE SHIFTER composed of Q101 and Q102.

After that, the signal is entered into Pin ① of IC101 via the input changeover switch (to select S input or COMPOSITE VIDEO input), like Y signal.



Difference between levels of C signal in S input and that after Y/C separation is adjusted to 0 in RV101.

3-2. PICTURE PROCESSING BLOCK

3-2-1. Y system

Y signal entered into Pin ③ of IC103 is compensated to remove DELAY created during CHROMA demodulation in next DELAY LINE. However, an attenuation of -6dB occurs in this DELAY LINE DL102, so the signal is amplified +6dB beforehand.
Y signal, +6dB amplified, is output from Pin ① of IC103 and transmitted through DL102 and BUFFER Q105, while a component of the signal entering Pin ㊻ of IC101 and used for RGB demodulation.
Amplification and DC levels of the Y signal entered into Pin ㊻ are controlled in IC101 by the DC voltage applied to Pin ㊹ (PICTURE LEVEL CONTROL) and Pin ㊶ (BRIGHT LEVEL CONTROL), while the signal being supplied to MATRIX BLOCK in the IC.
The other component of the Y signal is subject to SYNC. TIP CLAMP by Q106 to suppress APL (AVERAGE PICTURE LEVEL) fluctuation and then entered into Pin ⑤ of the +6dB AMP IC103. After the amplification of +6dB, the signal is output from Pin ⑦ of IC103 while one component being output from AV CABLE as a synchronization Y signal. Another component is entered into Pin ㉛ of IC101 and used for AFC BLOCK as a synchronization Ref. inside IC101. The other component is entered into Pin ⑭ of IC101 and used as BLANKING signal.

3-2-2. AFC

Y signal entered into Pin ㉛ of IC101 is sent into H SYNC. SEPARATION circuit in the IC, where H SYNC. is extracted, and then used as Ref. for AFC. The oscillation frequency of VCO (=32f_H=500KHz) consisting of an oscillator X201 connected to Pin ㉙ of IC101 is synchronized with the Ref. and used for inner processing.
The signal is then output from Pin ㉗ of IC101, transmitted through IC201 (Pin ④ → Pin ⑥ → Pin ⑪ → Pin ⑩) where pulse width is adjusted by RV207 and then entered again into Pin ㉖ of IC101 as a H-BLANKING signal.
IC101 converts C and Y signals into analog RGB signals. Detailed items of the signal processing include setting of CHROMA signal level, separation of U/V, decoding to color difference signal, setting of Y signal level, RGB conversion by MATRIX and addition of BLANKING. In addition, there are APC and AFC circuits.

3-2-3. C system

CHROMA signal entered into Pin ① of IC101, where the gain is controlled by BC voltage applied to Pin ㊸ (COLOUR LEVEL CONTROL) and Pin ㊹ (PICTURE LEVEL CONTROL), is output once from Pin ③. The signal is then separated into U and V signals in the U/V separation circuit consisting of Q104 (BUFFER, inverting amplifier), DL101 (PAL 1H DELAY LINE) and T101 (DELAY ADJUSTING TRANS.) while entering again into Pins ⑤(U) and ⑥(V) of IC101.
CHROMA signal, after U/V separation, is decoded to color difference signal in the DEMOD. BLOCK according to fsc (=4.433619 MHz) supplied from the APC BLOCK, and then mixed with Y signal in the MATRIX BLOCK and converted to RGB signal.

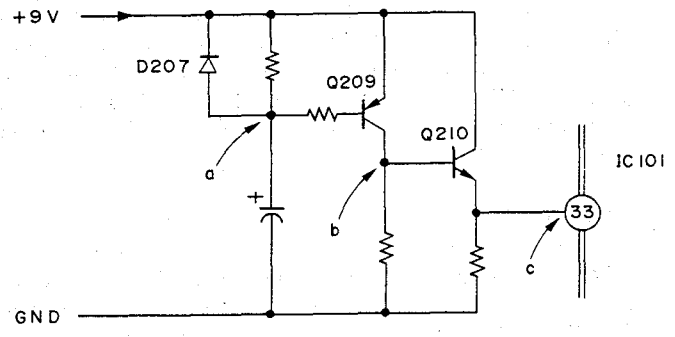
3-2-4. APC BLOCK

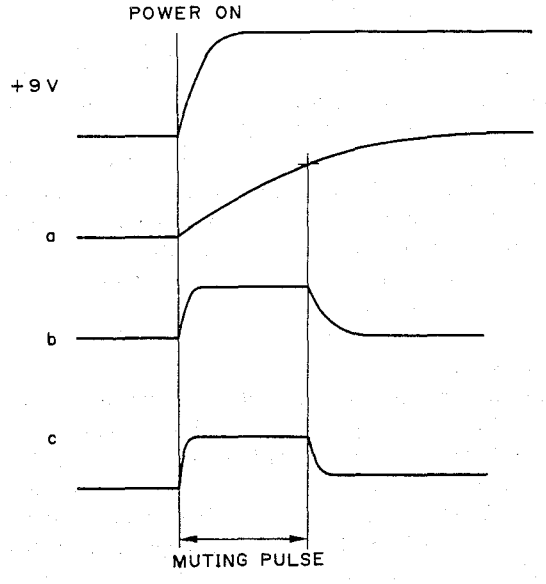
This Block generates continuous fsc required to demodulate CHROMA signals (U , V) to color difference signals (R–Y, B–Y). The phase of generated fsc is interlocked with the BURST of entered CHROMA signal and adjusted by CV101 so that the frequency generated by the crystal oscillator (X101) becomes fsc (=4.433619 MHz) upon no signals. In addition, PHASE is adjusted in RV103 so that demodulation axes are orthogonal.

RGB signal, with BLANKING signal inserted in the BLANKING BLOCK, is output from Pin ㊴(R), Pin ㊳(G) and Pin ㊲(B) of IC101.

3-2-5. POWER ON MUTE

When the power switch is turned ON, the picture is in disorder until AFC and APC of IC101 are locked, so MUTING of about 1 second is effected to video signal.



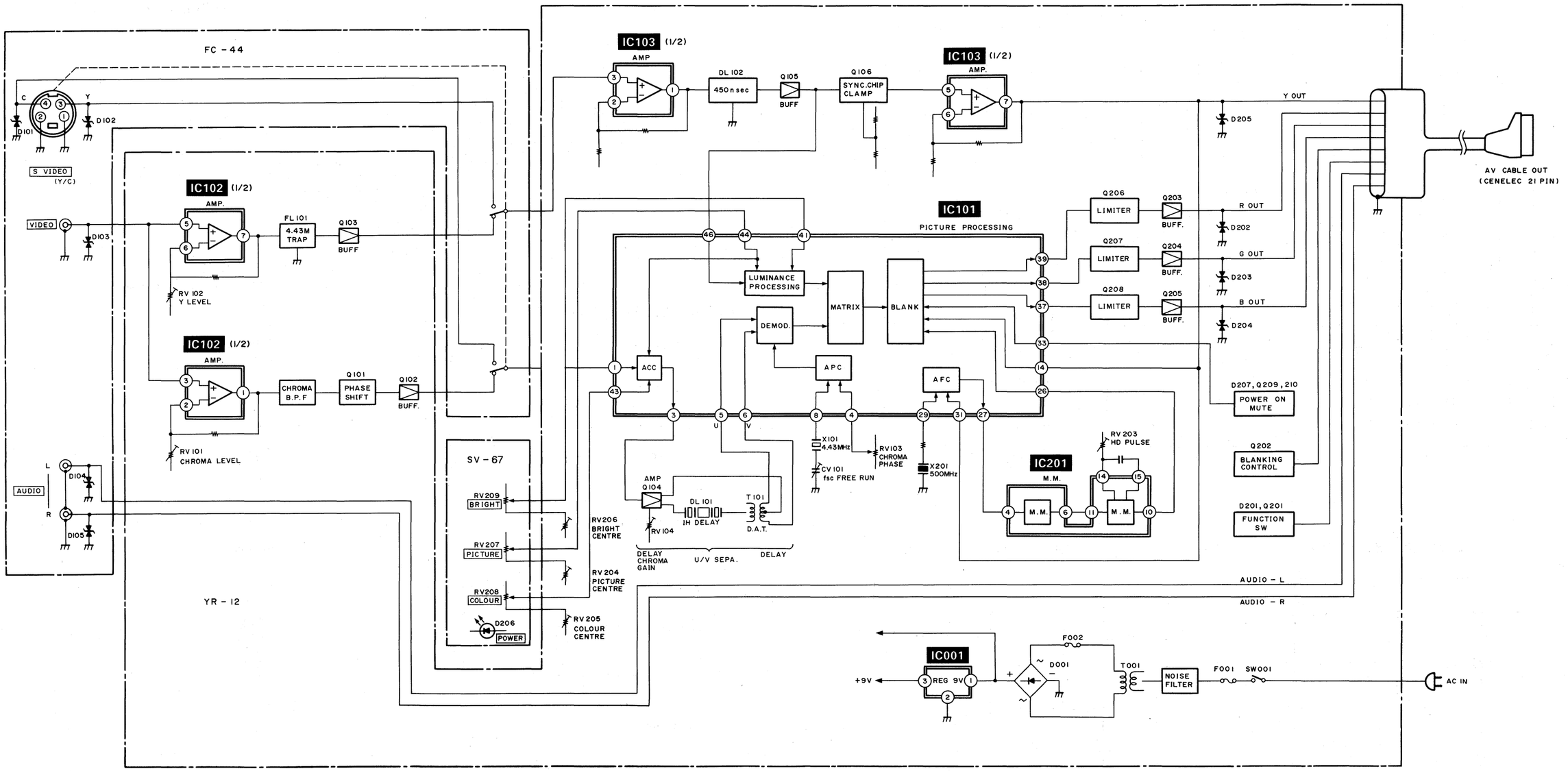


3-3. LIMITER - DRIVER

R (G, B) signal issued from Pin ㊴ (Pin ㊳, Pin ㊲) of IC101 is sliced in the LIMITER consisting of Q206 (Q207, Q208) for BLANKING LEVEL, transmitted through DRIVER (BUFFER) Q203 (Q204, Q205) and output from AV CABLE.

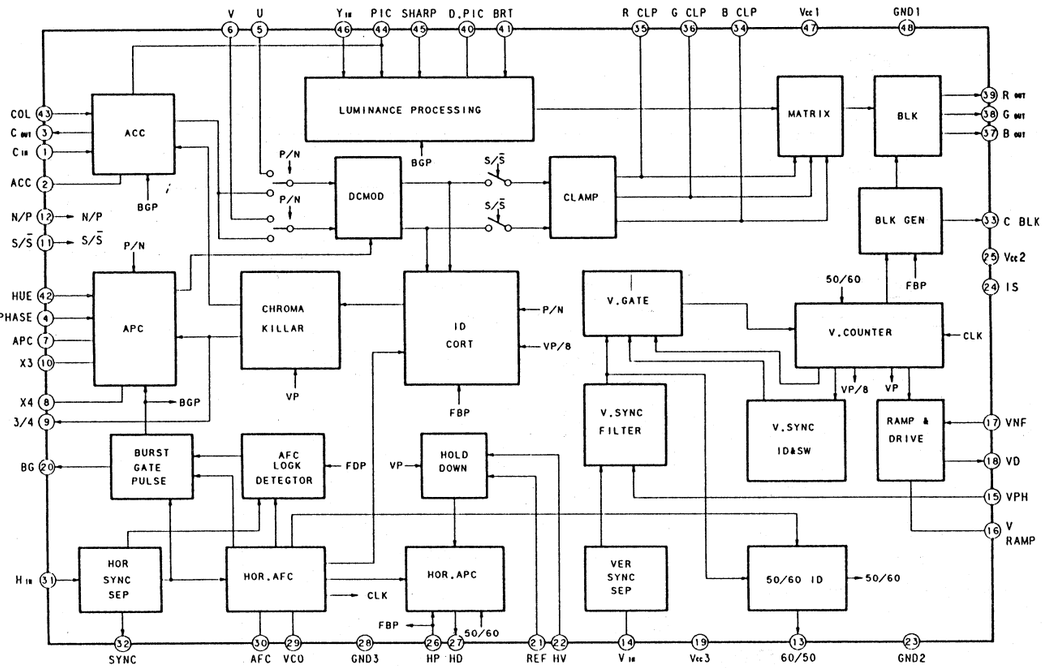
SECTION 4
DIAGRAMS

4-1. OVERALL BLOCK DIAGRAM

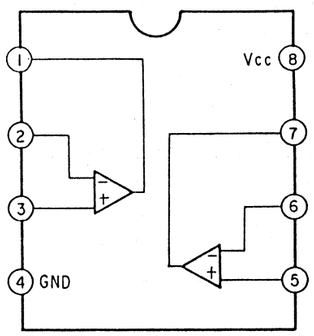


4-2. IC BLOCK DIAGRAM

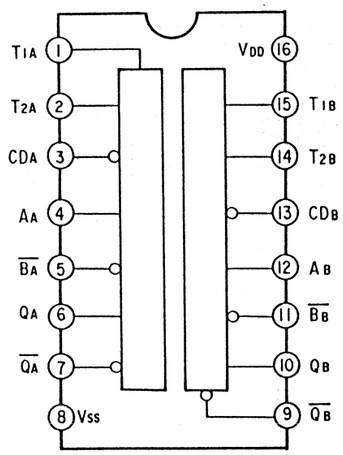
IC101 CXA1213S



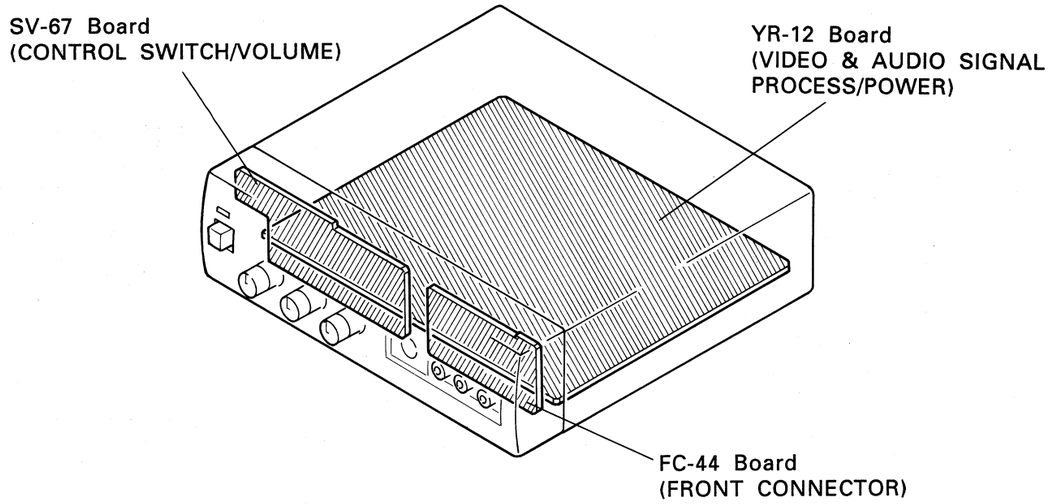
IC102, 103 MC14577AP



IC201 BU4538B

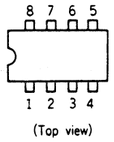


4-3. CIRCUIT BOARDS LOCATION

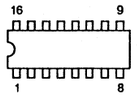


4-4. SEMICONDUCTORS

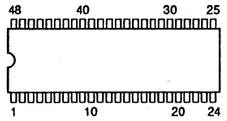
MC14577AP



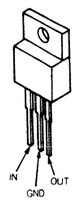
BU4538B



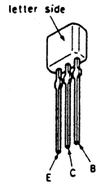
CXA1213S



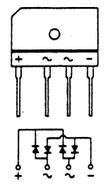
µPC2409HF



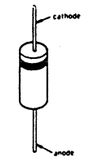
2SA1175-HFE
2SC2785-HFE



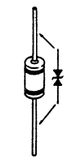
D2SB10



RD10ES-B2
1SS133



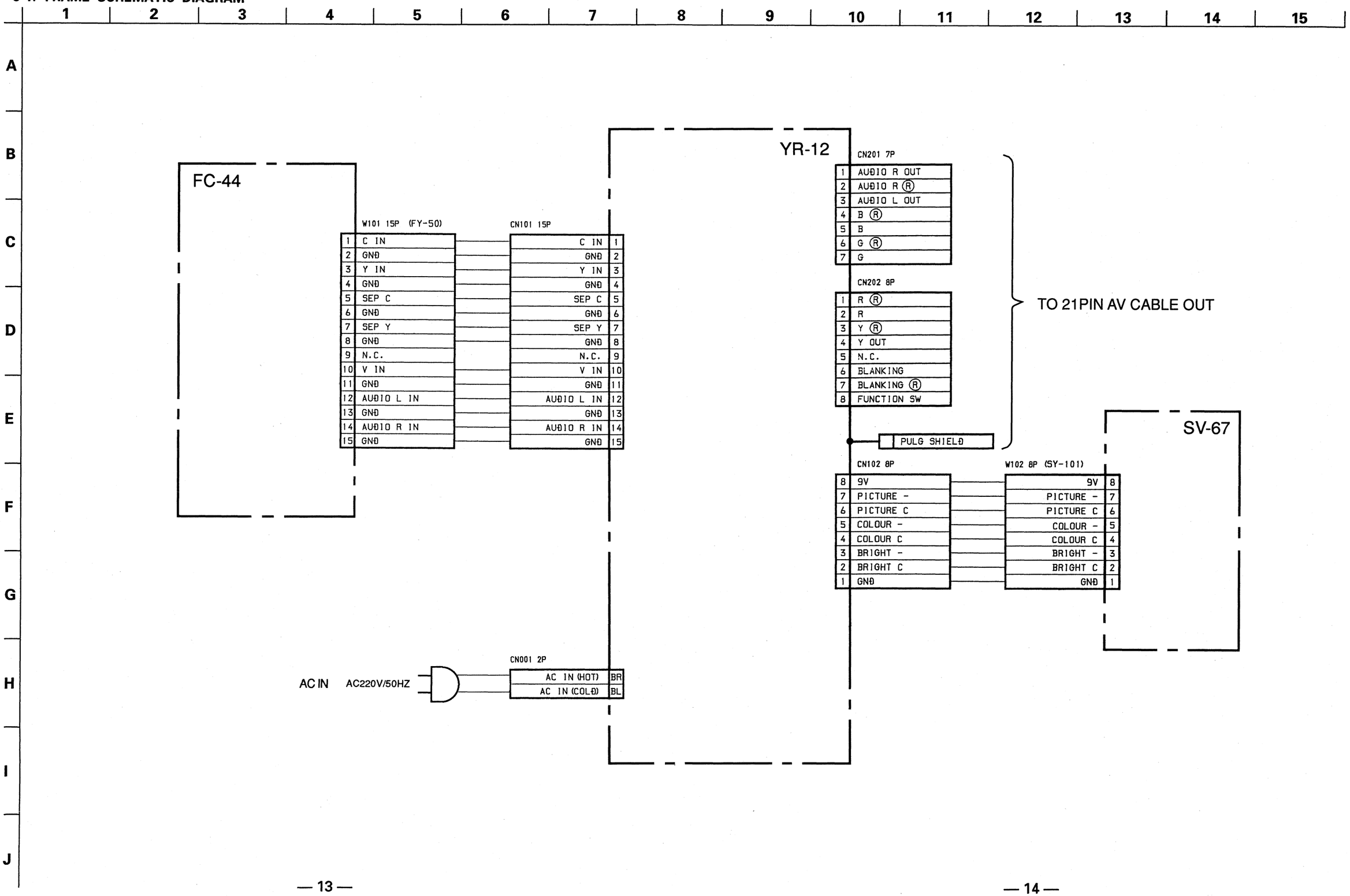
RD9.1EW



SECTION 5

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

5-1. FRAME SCHEMATIC DIAGRAM



5-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

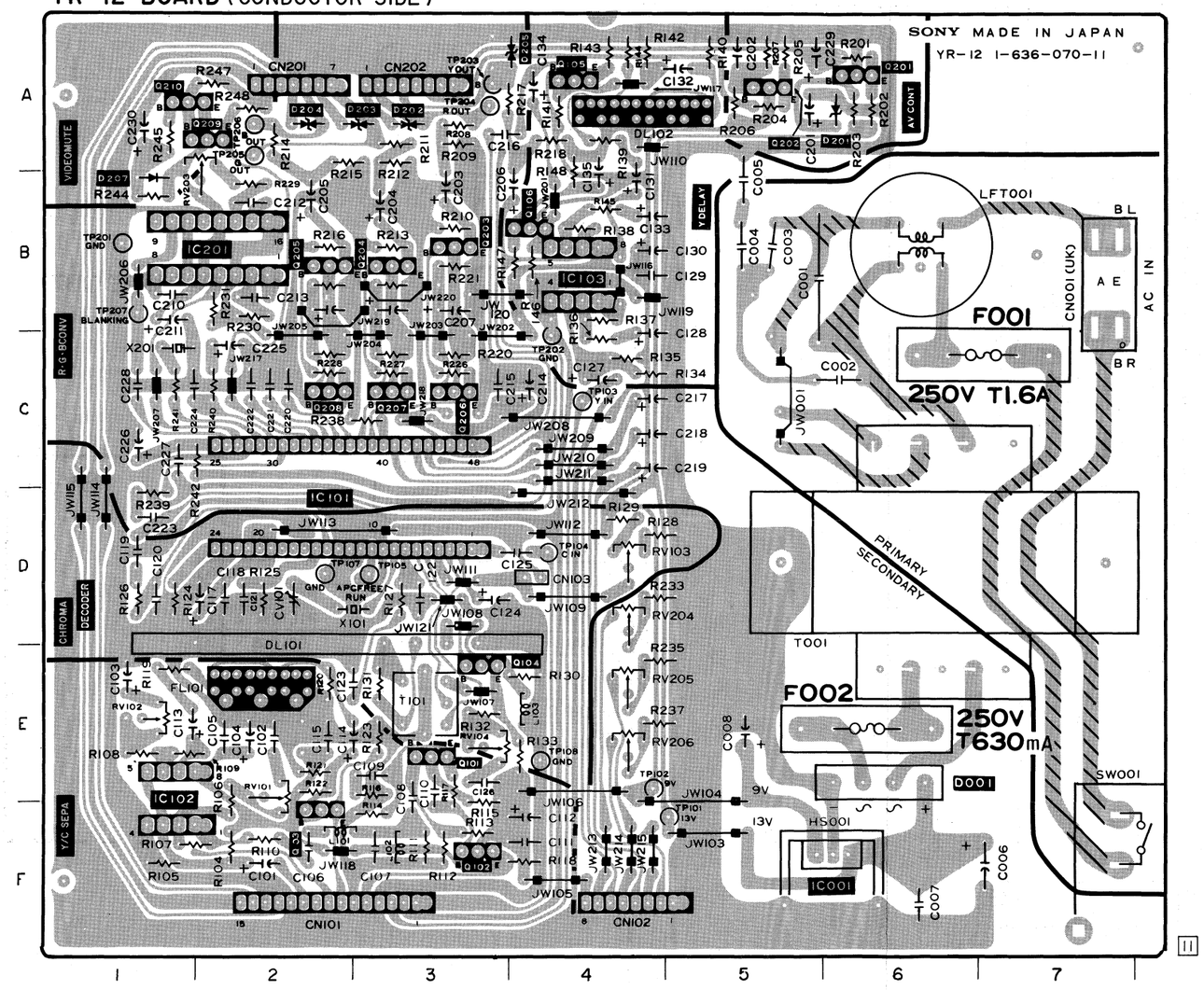
• ▒▒▒ : Pattern from the side which enables seeing.

D001 E-6
D201 A-6
D202 A-3
D203 A-3
D204 A-2
D205 A-4
D207 B-1

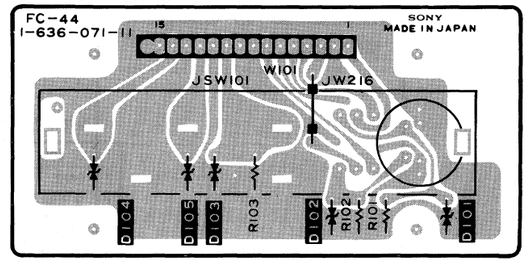
IC001 F-6
IC101 D-2
IC102 F-1
IC103 B-4
IC201 B-2

Q101 E-3
Q102 F-3
Q103 F-2
Q104 E-4
Q105 A-4
Q106 B-4
Q201 A-6
Q202 A-5
Q203 B-3
Q204 B-3
Q205 B-2
Q206 C-3
Q207 C-3
Q208 C-2
Q209 A-2
Q210 A-1

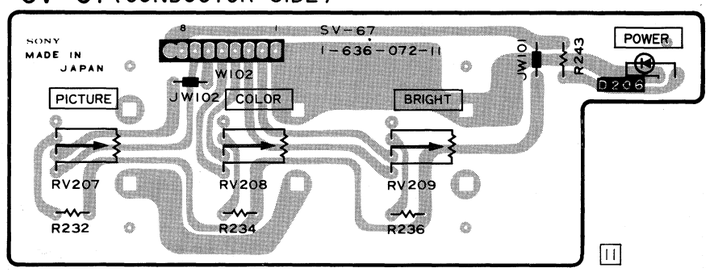
YR-12 BOARD (CONDUCTOR SIDE)

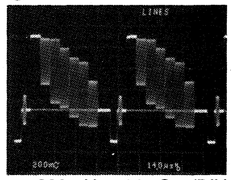


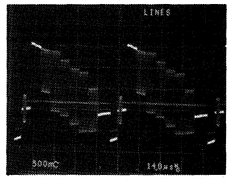
FC-44 BOARD (CONDUCTOR SIDE)



SV-67 (CONDUCTOR SIDE)



❶

200mV 14μ Sec/DIV

❷

500mV 14μ Sec/DIV

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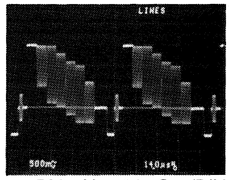
500mV 14μ Sec/DIV

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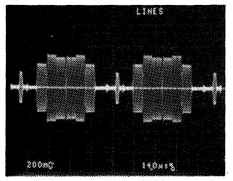
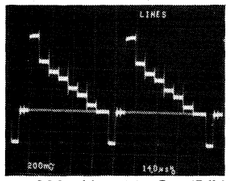

200mV 14μ Sec/DIV

❺

200mV 14μ Sec/DIV

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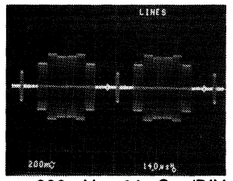
200mV 14μ Sec/DIV

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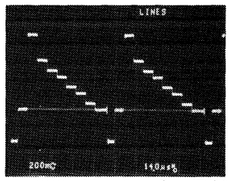
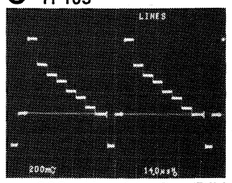
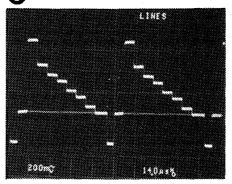
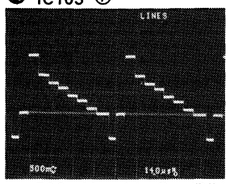
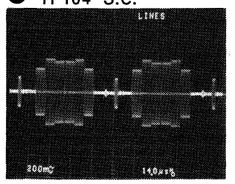
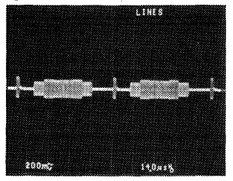

200mV 14μ Sec/DIV

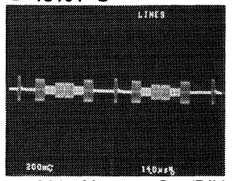
❽ TP103

200mV 14μ Sec/DIV

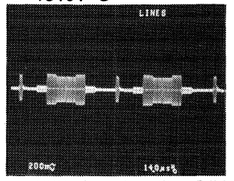
❾

200mV 14μ Sec/DIV

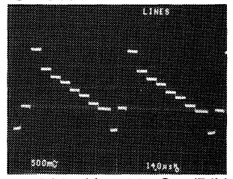
❿ IC103 ⑦

500mV 14μ Sec/DIV

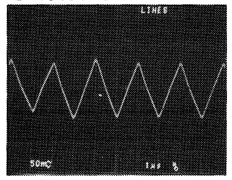
⓫ TP104 S.C.

200mV 14μ Sec/DIV

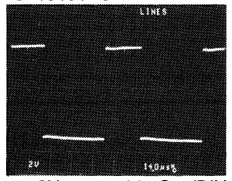
⓬

200mV 14μ Sec/DIV

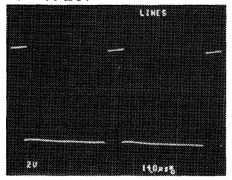
⓭ IC101 ⑤

200mV 14μ Sec/DIV

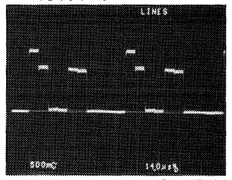
⓮ IC101 ⑥

200mV 14μ Sec/DIV

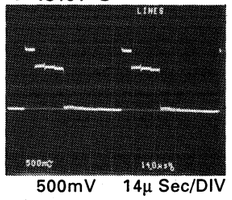
⓯ IC101 ㉛

500mV 14μ Sec/DIV

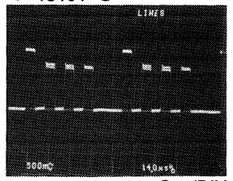
⓰ IC101 ㉙

50mV 1μ Sec/DIV

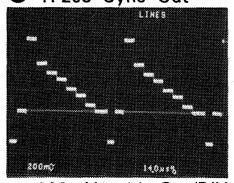
⓱ IC101 ㉗

2V 14μ Sec/DIV

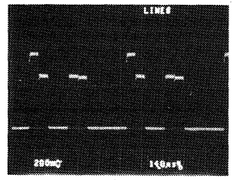
⓲ TP207

2V 14μ Sec/DIV

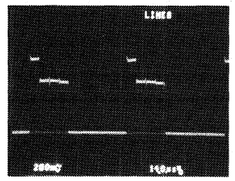
⓳ IC101 ㊴

500mV 14μ Sec/DIV

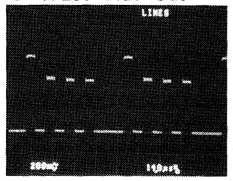
⓴ IC101 ㊳

500mV 14μ Sec/DIV

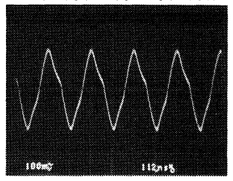
㉑ IC101 ㊲

500mV 14μ Sec/DIV

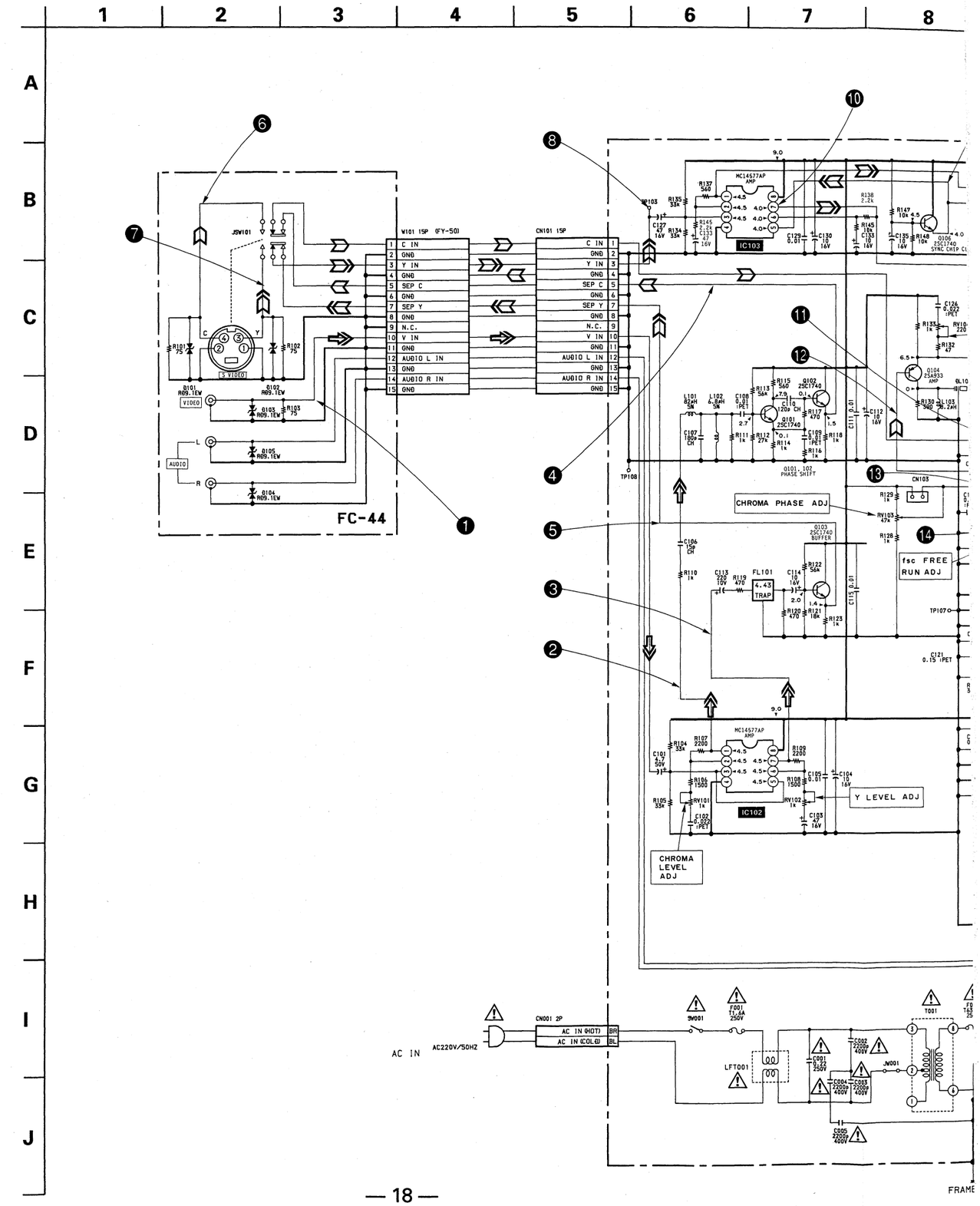
㉒ TP203 Sync Out

200mV 14μ Sec/DIV

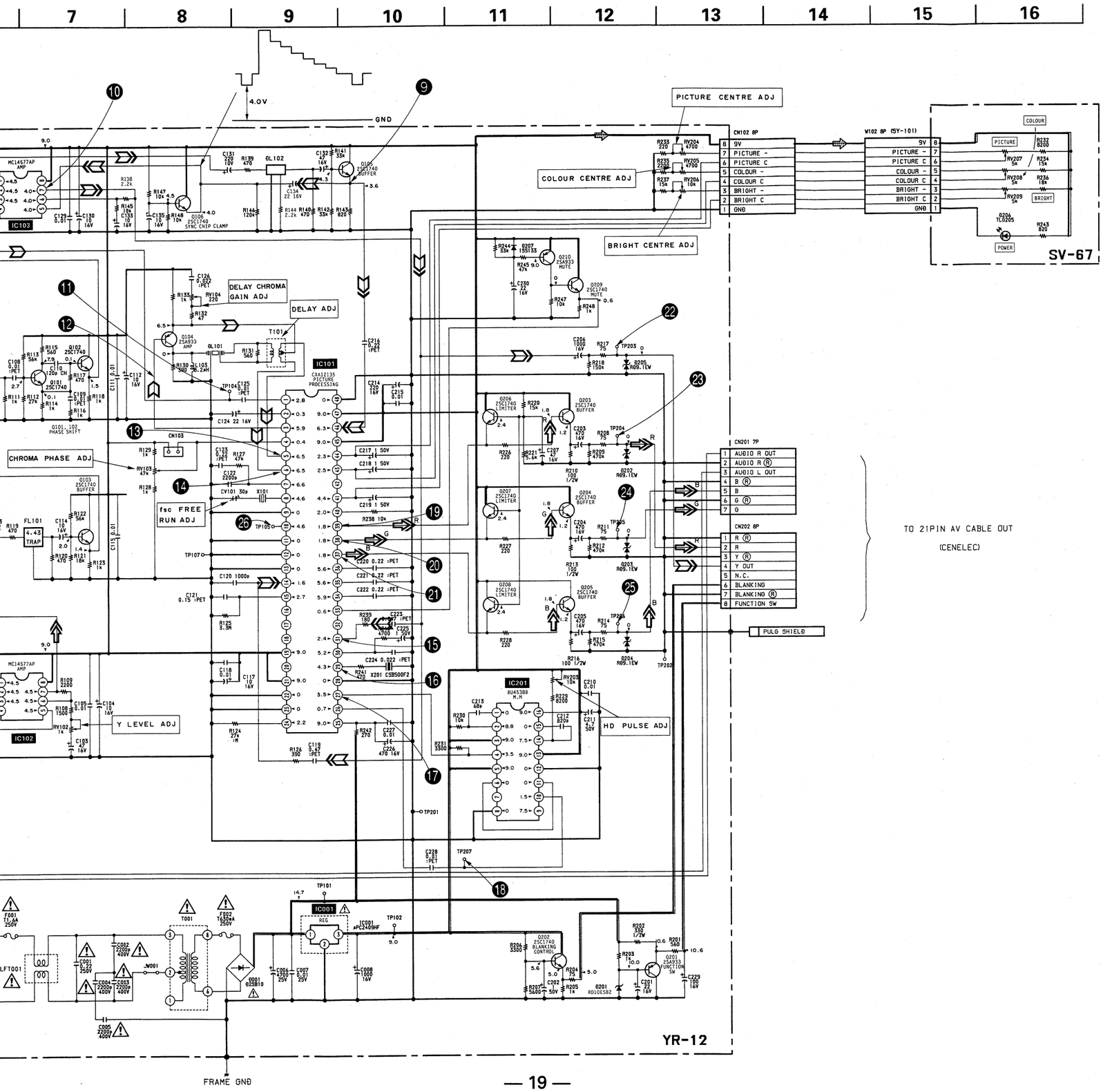
㉓ TP204 Red Out


㉔ TP205 Green Out


㉕ TP206 Blue Out


㉖ TP105 Fsc free run






- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- ▬ : B+ line.
- Voltages are DC between measurement points and ground unless otherwise noted.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- ⇨ : IN/OUT direction of B line (+, −).
- Circled numbers refer to waveforms.

When indicating parts by reference number, please include the board name.

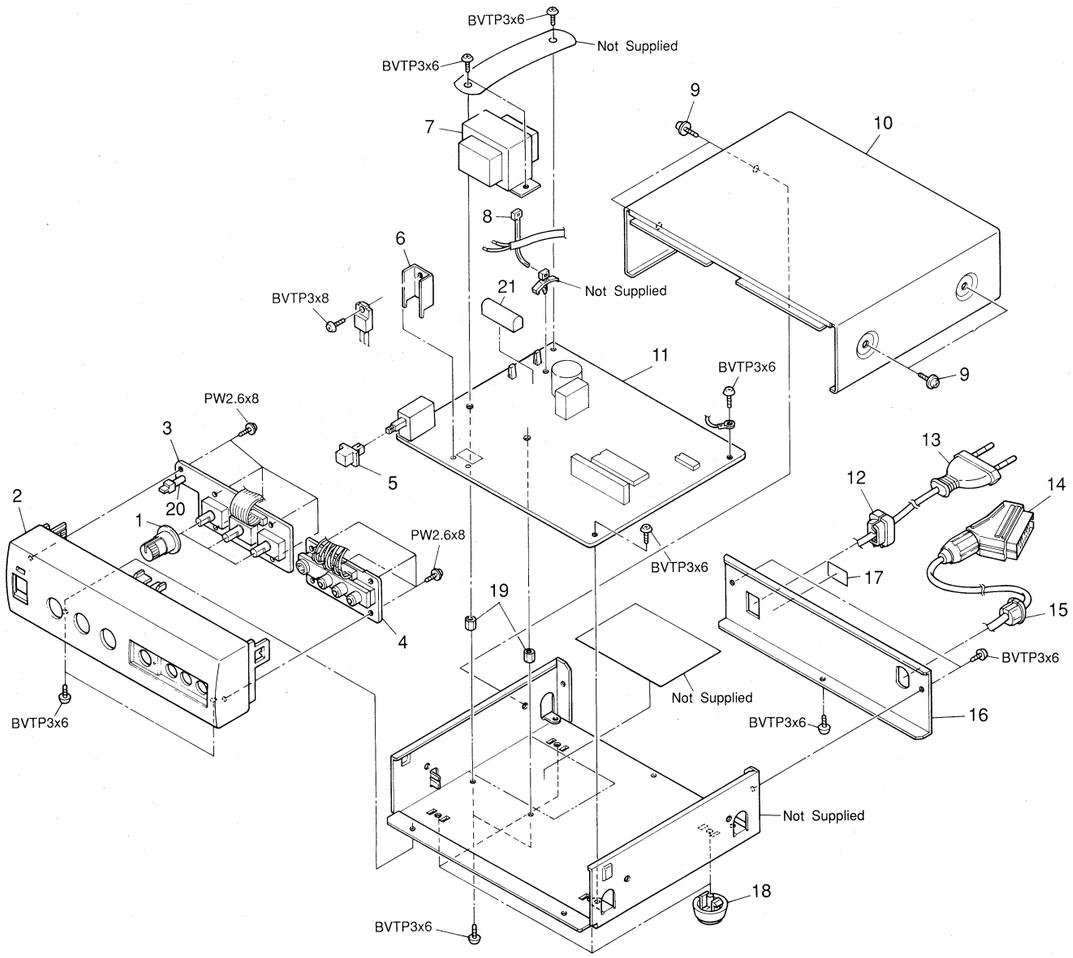
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safetry. Replace only with part number specified.

- Signal path
  - ⇨ : VIDEO Signal
  - ⇨ : CROMA Signal
  - ⇨ : Y Signal
  - ⇨ : R Signal
  - ⇨ : G Signal
  - ⇨ : B Signal

SECTION 6
EXPLODED VIEW

NOTE:
- -XX, -X mean standard parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



YR-1000( ) MECHA 1/1

No.	Part No.	Description	Remark
1	X-2118-215-1	KNOB (S) ASSY, VOL	
2	X-3749-039-1	PANEL SUB ASSY, FRONT	
3	*1-636-072-11	SV-67 BOARD	
4	*1-636-071-11	FC-44 BOARD	
5	2-143-102-01	BUTTON, POWER	
6	*4-875-327-01	HEAT SINK	
7	⚠.1-450-200-11	TRANSFORMER, POWER	
8	3-655-653-21	BAND (TAITON), BINDING	
9	4-847-802-11	SCREW, CASE	
10	3-749-167-01	CASE, UPPER	
11	*1-636-070-11	YR-12 BOARD	
12	*3-703-244-00	BUSHING (2104), CORD	
13	⚠ 1-555-795-00	CORD, POWER	
14	1-590-255-11	CABLE, AV 21P	
15	3-673-298-00	STOPPER, CORD	
16	*3-749-166-01	PANEL, REAR	
17	*3-749-024-01	LABEL, MODEL NUMBER (AE5)	
18	X-3701-069-0	FOOT ASSY, M.F	
19	*3-749-245-01	SPACER	
20	*3-749-243-01	HOLDER, LED	
21	*4-601-472-00	COVER, FUSE	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohrns
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, U : μ, for example :
  UA...: μA..., UPA...: μPA...,
  UPB...: μPB..., UPC...: μPC...,
  UPD...: μPD...
- CAPACITORS
  MF : μF, PF : μμF
- COILS
  MMH : mH, UH : μH

YR-1000( ) ELECT 1/3

Ref.No	Part No.	Description			Remark
	*1-636-070-11	YR-12 BOARD **********			
	*1-533-213-31	HOLDER, FUSE			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3			
		CAPACITOR			
C001	⚠ 1-136-185-00	FILM	0.22MF	20% 250V	
C002	⚠ 1-161-742-00	CERAMIC	0.0022MF	20% 400V	
C003	⚠ 1-161-742-00	CERAMIC	0.0022MF	20% 400V	
C004	⚠ 1-161-742-00	CERAMIC	0.0022MF	20% 400V	
C005	⚠ 1-161-742-00	CERAMIC	0.0022MF	20% 400V	
C006	1-124-564-11	ELECT	4700MF	20% 25V	
C007	1-161-051-00	CERAMIC	0.01MF	10% 25V	
C008	1-124-360-00	ELECT	1000MF	20% 16V	
C101	1-124-927-11	ELECT	4.7MF	20% 50V	
C102	1-108-808-11	MYLAR	0.022MF	10% 50V	
C103	1-124-477-11	ELECT	47MF	20% 16V	
C104	1-123-356-00	ELECT	10MF	20% 16V	
C105	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C106	1-162-203-31	CERAMIC	15PF	5% 50V	
C107	1-102-976-00	CERAMIC	180PF	5% 50V	
C108	1-130-483-00	MYLAR	0.01MF	10% 50V	
C109	1-130-483-00	MYLAR	0.01MF	10% 50V	
C110	1-102-816-00	CERAMIC	120PF	5% 50V	
C111	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C112	1-123-356-00	ELECT	10MF	20% 16V	
C113	1-126-176-11	ELECT	220MF	20% 10V	
C114	1-123-356-00	ELECT	10MF	20% 16V	
C115	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C117	1-123-356-00	ELECT	10MF	20% 16V	
C118	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C119	1-136-899-11	MYLAR	0.47MF	5% 50V	
C120	1-162-294-31	CERAMIC	0.001MF	10% 50V	
C121	1-130-497-00	MYLAR	0.15MF	5% 50V	
C122	1-161-375-00	CERAMIC	0.0022MF	30% 16V	
C123	1-130-499-00	MYLAR	0.22MF	5% 50V	
C124	1-123-330-00	ELECT	22MF	20% 16V	
C125	1-130-483-00	MYLAR	0.01MF	10% 50V	
C126	1-108-808-11	MYLAR	0.022MF	10% 50V	
C127	1-124-477-11	ELECT	47MF	20% 16V	
C128	1-126-176-11	ELECT	220MF	20% 10V	
C129	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C130	1-123-356-00	ELECT	10MF	20% 16V	
C131	1-126-176-11	ELECT	220MF	20% 10V	
C132	1-124-477-11	ELECT	47MF	20% 16V	
C133	1-124-477-11	ELECT	47MF	20% 16V	
C134	1-123-330-00	ELECT	22MF	20% 16V	
C135	1-123-356-00	ELECT	10MF	20% 16V	
C201	1-123-330-00	ELECT	22MF	20% 16V	
C202	1-124-791-11	ELECT	1MF	20% 50V	
C203	1-126-103-11	ELECT	470MF	20% 16V	
C204	1-126-103-11	ELECT	470MF	20% 16V	
C205	1-126-103-11	ELECT	470MF	20% 16V	
C206	1-124-360-00	ELECT	1000MF	20% 16V	
C207	1-124-477-11	ELECT	47MF	20% 16V	
C210	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C211	1-124-927-11	ELECT	4.7MF	20% 50V	
C212	1-162-293-31	CERAMIC	820PF	10% 50V	
C213	1-162-219-31	CERAMIC	68PF	5% 50V	
C214	1-124-120-11	ELECT	220MF	20% 16V	
C215	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C216	1-130-499-00	MYLAR	0.22MF	5% 50V	
C217	1-124-791-11	ELECT	1MF	20% 50V	
C218	1-124-791-11	ELECT	1MF	20% 50V	
C219	1-124-791-11	ELECT	1MF	20% 50V	
C220	1-130-499-00	MYLAR	0.22MF	5% 50V	
C221	1-130-499-00	MYLAR	0.22MF	5% 50V	
C222	1-130-499-00	MYLAR	0.22MF	5% 50V	
C223	1-108-812-11	MYLAR	0.047MF	10% 50V	
C224	1-108-808-11	MYLAR	0.022MF	10% 50V	
C225	1-124-791-11	ELECT	1MF	20% 50V	
C226	1-126-103-11	ELECT	470MF	20% 16V	
C227	1-161-379-00	CERAMIC	0.01MF	30% 16V	
C228	1-130-483-00	MYLAR	0.01MF	10% 50V	
C229	1-126-101-11	ELECT	100MF	20% 16V	
C230	1-123-330-00	ELECT	22MF	20% 16V	
		CONNECTOR			
CN101	*1-564-717-11	PIN, CONNECTOR (SMALL TYPE)15P			
CN102	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CN103	*1-565-513-11	PIN, CONNECTOR 2P			
CN201	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
CN202	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
		TRIMMER			
CV101	1-141-260-00	TRIMMER, CERAMIC			
		DIODE			
D001	⚠ 8-719-500-35	DIODE D2SB20			
D201	8-719-110-17	DIODE RD10ESB2			
D202	8-719-108-12	DIODE RD9.1EW			
D203	8-719-108-12	DIODE RD9.1EW			
D204	8-719-108-12	DIODE RD9.1EW			
D205	8-719-108-12	DIODE RD9.1EW			
D207	8-719-011-19	DIODE 1SS119			
		DELAY LINE			
DL101	1-415-313-00	DELAY LINE (1H)			
DL102	1-415-795-11	DELAY LINE, LC (400NS)			
		FUSE			
F001	⚠ 1-532-259-00	FUSE, TIME-LAG (1.6A)			
F002	⚠ 1-532-284-00	FUSE, TIME-LAG (0.63A)			
FL101	1-409-4				
HS001	*4-875-3				
IC001	⚠8-759-1				
IC101	8-752-0				
IC102	8-759-0				
IC103	8-759-0				
IC201	8-759-9				
L101	1-408-4				
L102	1-408-4				
L103	1-408-4				
LFT001	⚠ 1-421-7				
Q101	8-729-1				
Q102	8-729-1				
Q103	8-729-1				
Q104	8-729-1				
Q105	8-729-1				
Q106	8-729-1				
Q201	8-729-1				
Q202	8-729-1				
Q203	8-729-1				
Q204	8-729-1				
Q205	8-729-1				
Q206	8-729-1				
Q207	8-729-1				
Q208	8-729-1				
Q209	8-729-1				
Q210	8-729-1				
R104	1-249-4				
R105	1-249-4				
R106	1-249-4				
R107	1-249-4				
R108	1-249-4				
R109	1-249-4				
R110	1-249-4				
R111	1-249-4				
R112	1-249-4				
R113	1-249-4				
R114	1-249-4				

not stocked
required for
lay should be
; these items.

xample :
..,
C...,

Remark
16V
16V
16V
16V
50V
50V
50V
16V
16V
50V
50V
50V
50V
50V
50V
16V
16V
50V
50V
16V
16V
5P
8P
7P
8P

Ref.No	Part No.	Description	Remark
		FILTER	
FL101	1-409-470-11	FILTER, TRAP	
		HEAT SINK	
HS001	*4-875-327-01	HEAT SINK	
		IC	
IC001	⚠8-759-148-82	IC UPC2409HF	
IC101	8-752-036-21	IC CXA1213S	
IC102	8-759-037-18	IC MC14577AP	
IC103	8-759-037-18	IC MC14577AP	
IC201	8-759-932-48	IC BU4538B	
		COIL	
L101	1-408-420-00	INDUCTOR 82UH	
L102	1-408-407-00	INDUCTOR 6.8UH	
L103	1-408-408-00	INDUCTOR 8.2UH	
		FILTER	
⚠LFT001	1-421-765-11	FILTER, LINE	
		TRANSISTOR	
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q104	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q105	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q106	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q204	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q206	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q207	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q208	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q209	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q210	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		RESISTOR	
R104	1-249-435-11	CARBON 33K 5% 1/4W	
R105	1-249-435-11	CARBON 33K 5% 1/4W	
R106	1-249-419-11	CARBON 1.5K 5% 1/4W	
R107	1-249-421-11	CARBON 2.2K 5% 1/4W	
R108	1-249-419-11	CARBON 1.5K 5% 1/4W	
R109	1-249-421-11	CARBON 2.2K 5% 1/4W	
R110	1-249-417-11	CARBON 1K 5% 1/4W	
R111	1-249-417-11	CARBON 1K 5% 1/4W	
R112	1-249-434-11	CARBON 27K 5% 1/4W	
R113	1-249-438-11	CARBON 56K 5% 1/4W	
R114	1-249-417-11	CARBON 1K 5% 1/4W	

Ref.No	Part No.	Description	Remark
R115	1-249-414-11	CARBON 560 5% 1/4W	
R116	1-249-417-11	CARBON 1K 5% 1/4W	
R117	1-249-413-11	CARBON 470 5% 1/4W	
R118	1-249-417-11	CARBON 1K 5% 1/4W	
R119	1-249-413-11	CARBON 470 5% 1/4W	
R120	1-249-413-11	CARBON 470 5% 1/4W	
R121	1-249-432-11	CARBON 18K 5% 1/4W	
R122	1-249-438-11	CARBON 56K 5% 1/4W	
R123	1-249-417-11	CARBON 1K 5% 1/4W	
R124	1-215-455-00	METAL 27K 1% 1/6W	
R125	1-259-882-11	CARBON 3.3M 5% 1/4W	
R126	1-249-412-11	CARBON 390 5% 1/4W	
R127	1-249-437-11	CARBON 47K 5% 1/4W	
R128	1-249-417-11	CARBON 1K 5% 1/4W	
R129	1-249-417-11	CARBON 1K 5% 1/4W	
R130	1-249-412-11	CARBON 390 5% 1/4W	
R131	1-249-414-11	CARBON 560 5% 1/4W	
R132	1-249-401-11	CARBON 47 5% 1/4W	
R133	1-249-417-11	CARBON 1K 5% 1/4W	
R134	1-249-435-11	CARBON 33K 5% 1/4W	
R135	1-249-435-11	CARBON 33K 5% 1/4W	
R136	1-249-414-11	CARBON 560 5% 1/4W	
R137	1-249-414-11	CARBON 560 5% 1/4W	
R138	1-249-421-11	CARBON 2.2k 5% 1/4W	
R139	1-249-413-11	CARBON 470 5% 1/4W	
R140	1-249-413-11	CARBON 470 5% 1/4W	
R141	1-249-435-11	CARBON 33K 5% 1/4W	
R142	1-249-435-11	CARBON 33K 5% 1/4W	
R143	1-249-416-11	CARBON 820 5% 1/4W	
R144	1-249-421-11	CARBON 2.2K 5% 1/4W	
R145	1-249-421-11	CARBON 2.2K 5% 1/4W	
R146	1-247-881-00	CARBON 120K 5% 1/4W	
R147	1-249-429-11	CARBON 10K 5% 14/W	
R148	1-249-429-11	CARBON 10K 5% 1/4W	
R201	1-249-414-11	CARBON 560 5% 1/4W	
R202	1-247-706-11	CARBON 330 5% 1/2W	
R203	1-249-417-11	CARBON 1K 5% 1/4W	
R204	1-247-804-11	CARBON 75 5% 1/4W	
R205	1-249-417-11	CARBON 1K 5% 1/4W	
R206	1-249-423-11	CARBON 3.3K 5% 1/4W	
R207	1-249-426-11	CARBON 5.6K 5% 1/4W	
R208	1-247-804-11	CARBON 75 5% 1/4W	
R209	1-247-895-00	CARBON 470K 5% 1/4W	
R210	1-247-700-11	CARBON 100 5% 1/2W	
R211	1-247-804-11	CARBON 75 5% 1/4W	
R212	1-247-895-00	CARBON 470K 5% 1/4W	
R213	1-247-700-11	CARBON 100 5% 1/2W	
R214	1-247-804-11	CARBON 75 5% 1/4W	
R215	1-247-895-00	CARBON 470K 5% 1/4W	
R216	1-247-700-11	CARBON 100 5% 1/2W	
R217	1-247-804-11	CARBON 75 5% 1/4W	
R218	1-247-883-00	CARBON 150K 5% 1/4W	
R220	1-249-431-11	CARBON 15K 5% 1/4W	
R221	1-249-426-11	CARBON 5.6K 5% 1/4W	

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R226	1-249-409-11	CARBON 220 5% 1/4W	
R227	1-249-409-11	CARBON 220 5% 1/4W	
R228	1-249-409-11	CARBON 220 5% 1/4W	
R229	1-249-428-11	CARBON 8.2K 5% 1/4W	
R230	1-249-429-11	CARBON 10K 5% 1/4W	
R231	1-249-423-11	CARBON 3.3K 5% 1/4W	
R233	1-249-409-11	CARBON 220 5% 1/4W	
R235	1-249-421-11	CARBON 2.2K 5% 1/4W	
R237	1-249-431-11	CARBON 15K 5% 1/4W	
R238	1-249-429-11	CARBON 10K 5% 1/4W	
R239	1-249-408-11	CARBON 180 5% 1/4W	
R240	1-249-425-11	CARBON 4.7K 5% 1/4W	
R241	1-249-413-11	CARBON 470 5% 1/4W	
R242	1-249-410-11	CARBON 270 5% 1/4W	
R244	1-249-435-11	CARBON 33K 5% 1/4W	
R245	1-249-437-11	CARBON 47K 5% 1/4W	
R247	1-249-429-11	CARBON 10K 5% 1/4W	
R248	1-249-417-11	CARBON 1K 5% 1/4W	
		VARIABLE RESISTOR	
RV101	1-228-990-00	RES, ADJ, CARBON 1K	
RV102	1-228-990-00	RES, ADJ, CARBON 1K	
RV103	1-228-996-00	RES, ADJ, CARBON 47K	
RV104	1-230-504-11	RES, ADJ, CARBON 220	
RV203	1-228-994-00	RES, ADJ, CARBON 10K	
RV204	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV205	1-228-993-00	RES, ADJ, CARBON 4.7K	
RV206	1-228-994-00	RES, ADJ, CARBON 10K	
		SWITCH	
SW001	⚠1-571-877-11	SWITCH, PUSH (AC POWER)	
		TRANSFORMER	
T001	⚠1-450-200-11	TRANSFORMER, POWER	
T101	1-425-928-00	TRANSFORMER, DELAY ADJUSTING	
		CRYSTAL	
X101	1-567-504-11	OSCILLATOR, CRYSTAL (4.433619MHz)	
X201	1-577-611-11	OSCILALTOR, CERAMIC (500KHz)	
	*1-636-072-11	SV-67 BOARD **********	
	*3-749-243-01	HOLDER, LED	
		DIODE	
D206	8-719-902-51	DIODE SLP251B	
		RESISTOR	
R232	1-249-428-11	CARBON 8.2K 5% 1/4W	
R234	1-249-431-11	CARBON 15K 5% 1/4W	

Ref.No	Part No.	Description	Remark
R236	1-249-432-11	CARBON 18K 5% 1/4W	
R243	1-249-416-11	CARBON 820 5% 1/4W	
		VARIABLE RESISTOR	
RV207	1-241-032-11	RES, VER, CARBON 5K (PICTURE)	
RV208	1-241-032-11	RES, VER, CARBON 5K (COLOUR)	
RV209	1-241-032-11	RES, VER, CARBON 5K (BRIGHT)	
	*1-636-071-11	FC-44 BOARD **********	
		DIODE	
D101	8-719-108-12	DIODE RD9.1EW	
D102	8-719-108-12	DIODE RD9.1EW	
D103	8-719-108-12	DIODE RD9.1EW	
D104	8-719-108-12	DIODE RD9.1EW	
D105	8-719-108-12	DIODE RD9.1EW	
		JACK	
JSW101	1-537-115-11	TERMINAL BOARD (S VIDEO/VIDEO/AUDIO INPUT)	
		RESISTOR	
R101	1-247-804-11	CARBON 75 5% 1/4W	
R102	1-247-804-11	CARBON 75 5% 1/4W	
R103	1-247-804-11	CARBON 75 5% 1/4W	
		MISCELLANEOUS **********	
	⚠1-555-795-00	CORD, POWER	
	1-590-255-11	CABLE, AV 21P	

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
*3-749-234-01	CUSHION (LEFT)	
*3-749-235-01	CUSHION (RIGHT)	
*3-749-237-01	INDIVIDUAL CARTON	
3-752-169-11	MANUAL, INSTRUCTION	
3-896-220-01	BAG, PROTECTION	

HARDWARE LIST
****

	SCREW	
7-685-134-19	SCREW (+PW 2.6X8), TAPPING	
7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

not stocked
required for
lay should be
these items.

xample :
...,
C...,

Ref.No	Part No.	Description				Remark
		FILTER				
FL101	1-409-470-11	FILTER, TRAP				
		HEAT SINK				
HS001	*4-875-327-01	HEAT SINK				
		IC				
IC001	⚠8-759-148-82	IC UPC2409HF				
IC101	8-752-036-21	IC CXA1213S				
IC102	8-759-037-18	IC MC14577AP				
IC103	8-759-037-18	IC MC14577AP				
IC201	8-759-932-48	IC BU4538B				
		COIL				
L101	1-408-420-00	INDUCTOR	82UH			
L102	1-408-407-00	INDUCTOR	6.8UH			
L103	1-408-408-00	INDUCTOR	8.2UH			
		FILTER				
⚠LFT001	1-421-765-11	FILTER, LINE				
		TRANSISTOR				
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q102	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q104	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q105	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q106	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q204	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q205	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q206	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q207	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q208	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q209	8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q210	8-729-119-76	TRANSISTOR 2SA1175-HFE				
		RESISTOR				
R104	1-249-435-11	CARBON	33K	5%	1/4W	
R105	1-249-435-11	CARBON	33K	5%	1/4W	
R106	1-249-419-11	CARBON	1.5K	5%	1/4W	
R107	1-249-421-11	CARBON	2.2K	5%	1/4W	
R108	1-249-419-11	CARBON	1.5K	5%	1/4W	
R109	1-249-421-11	CARBON	2.2K	5%	1/4W	
R110	1-249-417-11	CARBON	1K	5%	1/4W	
R111	1-249-417-11	CARBON	1K	5%	1/4W	
R112	1-249-434-11	CARBON	27K	5%	1/4W	
R113	1-249-438-11	CARBON	56K	5%	1/4W	
R114	1-249-417-11	CARBON	1K	5%	1/4W	
R115	1-249-414-11	CARBON	560	5%	1/4W	
R116	1-249-417-11	CARBON	1K	5%	1/4W	
R117	1-249-413-11	CARBON	470	5%	1/4W	
R118	1-249-417-11	CARBON	1K	5%	1/4W	
R119	1-249-413-11	CARBON	470	5%	1/4W	
R120	1-249-413-11	CARBON	470	5%	1/4W	
R121	1-249-432-11	CARBON	18K	5%	1/4W	
R122	1-249-438-11	CARBON	56K	5%	1/4W	
R123	1-249-417-11	CARBON	1K	5%	1/4W	
R124	1-215-455-00	METAL	27K	1%	1/6W	
R125	1-259-882-11	CARBON	3.3M	5%	1/4W	
R126	1-249-412-11	CARBON	390	5%	1/4W	
R127	1-249-437-11	CARBON	47K	5%	1/4W	
R128	1-249-417-11	CARBON	1K	5%	1/4W	
R129	1-249-417-11	CARBON	1K	5%	1/4W	
R130	1-249-412-11	CARBON	390	5%	1/4W	
R131	1-249-414-11	CARBON	560	5%	1/4W	
R132	1-249-401-11	CARBON	47	5%	1/4W	
R133	1-249-417-11	CARBON	1K	5%	1/4W	
R134	1-249-435-11	CARBON	33K	5%	1/4W	
R135	1-249-435-11	CARBON	33K	5%	1/4W	
R136	1-249-414-11	CARBON	560	5%	1/4W	
R137	1-249-414-11	CARBON	560	5%	1/4W	
R138	1-249-421-11	CARBON	2.2k	5%	1/4W	
R139	1-249-413-11	CARBON	470	5%	1/4W	
R140	1-249-413-11	CARBON	470	5%	1/4W	
R141	1-249-435-11	CARBON	33K	5%	1/4W	
R142	1-249-435-11	CARBON	33K	5%	1/4W	
R143	1-249-416-11	CARBON	820	5%	1/4W	
R144	1-249-421-11	CARBON	2.2K	5%	1/4W	
R145	1-249-421-11	CARBON	2.2K	5%	1/4W	
R146	1-247-881-00	CARBON	120K	5%	1/4W	
R147	1-249-429-11	CARBON	10K	5%	14/W	
R148	1-249-429-11	CARBON	10K	5%	1/4W	
R201	1-249-414-11	CARBON	560	5%	1/4W	
R202	1-247-706-11	CARBON	330	5%	1/2W	
R203	1-249-417-11	CARBON	1K	5%	1/4W	
R204	1-247-804-11	CARBON	75	5%	1/4W	
R205	1-249-417-11	CARBON	1K	5%	1/4W	
R206	1-249-423-11	CARBON	3.3K	5%	1/4W	
R207	1-249-426-11	CARBON	5.6K	5%	1/4W	
R208	1-247-804-11	CARBON	75	5%	1/4W	
R209	1-247-895-00	CARBON	470K	5%	1/4W	
R210	1-247-700-11	CARBON	100	5%	1/2W	
R211	1-247-804-11	CARBON	75	5%	1/4W	
R212	1-247-895-00	CARBON	470K	5%	1/4W	
R213	1-247-700-11	CARBON	100	5%	1/2W	
R214	1-247-804-11	CARBON	75	5%	1/4W	
R215	1-247-895-00	CARBON	470K	5%	1/4W	
R216	1-247-700-11	CARBON	100	5%	1/2W	
R217	1-247-804-11	CARBON	75	5%	1/4W	
R218	1-247-883-00	CARBON	150K	5%	1/4W	
R220	1-249-431-11	CARBON	15K	5%	1/4W	
R221	1-249-426-11	CARBON	5.6K	5%	1/4W	
R226	1-249-409-11	CARBON	220	5%	1/4W	
R227	1-249-409-11	CARBON	220	5%	1/4W	
R228	1-249-409-11	CARBON	220	5%	1/4W	
R229	1-249-428-11	CARBON	8.2K	5%	1/4W	
R230	1-249-429-11	CARBON	10K	5%	1/4W	
R231	1-249-423-11	CARBON	3.3K	5%	1/4W	
R233	1-249-409-11	CARBON	220	5%	1/4W	
R235	1-249-421-11	CARBON	2.2K	5%	1/4W	
R237	1-249-431-11	CARBON	15K	5%	1/4W	
R238	1-249-429-11	CARBON	10K	5%	1/4W	
R239	1-249-408-11	CARBON	180	5%	1/4W	
R240	1-249-425-11	CARBON	4.7K	5%	1/4W	
R241	1-249-413-11	CARBON	470	5%	1/4W	
R242	1-249-410-11	CARBON	270	5%	1/4W	
R244	1-249-435-11	CARBON	33K	5%	1/4W	
R245	1-249-437-11	CARBON	47K	5%	1/4W	
R247	1-249-429-11	CARBON	10K	5%	1/4W	
R248	1-249-417-11	CARBON	1K	5%	1/4W	
		VARIABLE RESISTOR				
RV101	1-228-990-00	RES, ADJ, CARBON 1K				
RV102	1-228-990-00	RES, ADJ, CARBON 1K				
RV103	1-228-996-00	RES, ADJ, CARBON 47K				
RV104	1-230-504-11	RES, ADJ, CARBON 220				
RV203	1-228-994-00	RES, ADJ, CARBON 10K				
RV204	1-228-993-00	RES, ADJ, CARBON 4.7K				
RV205	1-228-993-00	RES, ADJ, CARBON 4.7K				
RV206	1-228-994-00	RES, ADJ, CARBON 10K				
		SWITCH				
SW001	⚠1-571-877-11	SWITCH, PUSH (AC POWER)				
		TRANSFORMER				
T001	⚠ 1-450-200-11	TRANSFORMER, POWER				
T101	1-425-928-00	TRANSFORMER, DELAY ADJUSTING				
		CRYSTAL				
X101	1-567-504-11	OSCILLATOR, CRYSTAL (4.433619MHz)				
X201	1-577-611-11	OSCILALTOR, CERAMIC (500KHz)				
		**********				
	*1-636-072-11	SV-67 BOARD				
		**********				
	*3-749-243-01	HOLDER, LED				
		DIODE				
D206	8-719-902-51	DIODE SLP251B				
		RESISTOR				
R232	1-249-428-11	CARBON	8.2K	5%	1/4W	
R234	1-249-431-11	CARBON	15K	5%	1/4W	
R236	1-249-432-11	CARBON	18K	5%	1/4W	
R243	1-249-416-11	CARBON	820	5%	1/4W	
		VARIABLE RESISTOR				
RV207	1-241-032-11	RES, VER, CARBON 5K (PICTURE)				
RV208	1-241-032-11	RES, VER, CARBON 5K (COLOUR)				
RV209	1-241-032-11	RES, VER, CARBON 5K (BRIGHT)				
		**********				
	*1-636-071-11	FC-44 BOARD				
		**********				
		DIODE				
D101	8-719-108-12	DIODE RD9.1EW				
D102	8-719-108-12	DIODE RD9.1EW				
D103	8-719-108-12	DIODE RD9.1EW				
D104	8-719-108-12	DIODE RD9.1EW				
D105	8-719-108-12	DIODE RD9.1EW				
		JACK				
JSW101	1-537-115-11	TERMINAL BOARD (S VIDEO/VIDEO/AUDIO INPUT)				
		RESISTOR				
R101	1-247-804-11	CARBON	75	5%	1/4W	
R102	1-247-804-11	CARBON	75	5%	1/4W	
R103	1-247-804-11	CARBON	75	5%	1/4W	
		**********				
		MISCELLANEOUS				
		**********				
	⚠ 1-555-795-00	CORD, POWER				
	1-590-255-11	CABLE, AV 21P				
		**********				

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
*3-749-234-01	CUSHION (LEFT)	
*3-749-235-01	CUSHION (RIGHT)	
*3-749-237-01	INDIVIDUAL CARTON	
3-752-169-11	MANUAL, INSTRUCTION	
3-896-220-01	BAG, PROTECTION	

HARDWARE LIST
****

	SCREW	
7-685-134-19	SCREW (+PW 2.6X8), TAPPING	
7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SECTION 8
ELECTRICAL ADJUSTMENTS

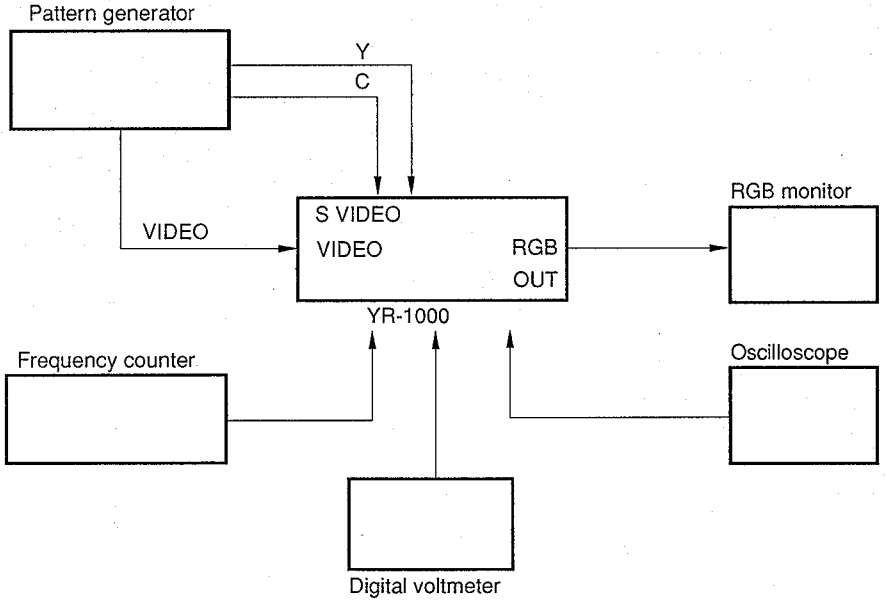
During the Adjustment, See the Parts Arrangement Diagram for the Adjsutments on Page 30.

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

Equipment required

- Dual trace ocsilloscope
- Frequency counter
- PAL/SECAM signal pattern generator
- Digital voltmeter
- FET probe
- Ceramic screw dirver
- RGB color monitor

Equipment connection



8-1. Power supply check (YR-12 board)

Power switch	ON
Measurement equipment	Digital voltmeter
Check value : 14 V	
Measurement point	TP101
Specified value	14.0 ± 1.0 Vdc
Check value : 9 V	
Measurement point	TP102
Specified value	9.0 ± 0.1 Vdc

Check

1) Be sure that the voltages of the respective measurement points meet the specified values.

8-2. Converter section adjustment (YR-12 board)

8-2-1. APC free run adjustment

Signal	No signal
Measurement point	TP105 (GND: TP107)
Measurement equipment	Frequency counter
Adjustment element	CV101
Specified value	4,433,619 ± 15 Hz

Adjustment

1) Short CN103.
2) Connect the frequency counter to TP105.
3) Using a FET probe and a ceramic screw driver, adjust CV101 so that the frequency is 4,433,619 ± 15 Hz.

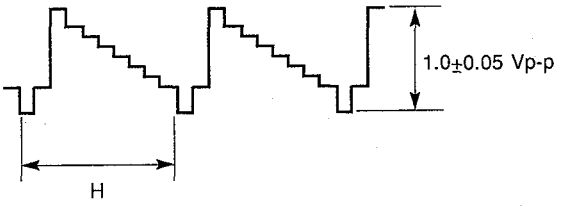
8-2-2. Y/C out adjustment

1. Y level adjustment

Signal	PAL Color-bar
Input terminal	VIDEO
Measurement point	TP103 (GND: TP108)
Measurement equipment	Oscilloscope
Adjustment element	RV102
Specified value	1.0 ± 0.05 V_{P-P}

Adjustment

Adjust so that the level of the waveform is 1.0 ± 0.05 V_{P-P}

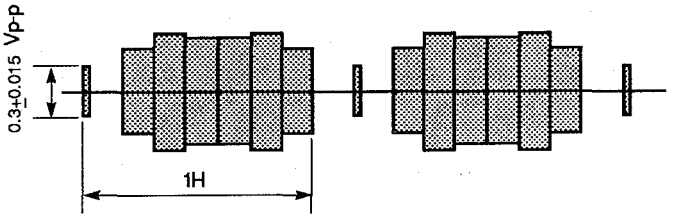


2. Chroma level adjustment

Signal	PAL Color-bar
Input terminal	VIDEO
Measurement point	TP104 (GND: TP108)
Measurement equipment	Oscilloscope
Adjustment element	RV101
Specified value	0.3 ± 0.015 V_{P-P}

Adjustment

Adjust so that the burst level of the waveform is 0.3 ± 0.015 V_{P-P}.

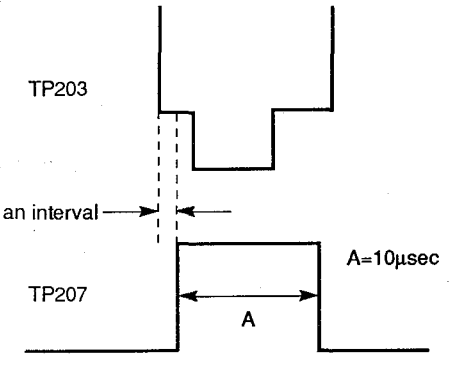


8-2-3. Blanking position adjustment

Signal	PAL SP Color-bar
Input terminal	VIDEO
Measurement point	TP203 (GND: TP201) TP207 (GND: TP201)
Measurement equipment	Oscilloscope
Adjustment element	RV203
Specified value	10 ± 0.5 µsec

Adjustment

Adjust RV203 so that pulse width A is 10 ± 0.5µsec.

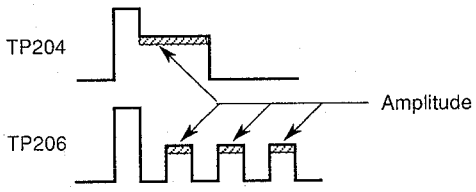


8-2-4. 1H delay adjustment

Signal	PAL Color-bar
Input terminal	VIDEO
Measurement point	CH-1 : TP204 (GND: TP202) CH-2 : TP206 (GND: TP201)
Measurement equipment	Oscilloscope
Adjustment element	T101 (RV104)
Specified value	Minimize as much as possible

Adjustment

1) Adjust T101 so that their amplitudes become minimum.
2) If the specification is not met using T101, adjust using RV104.

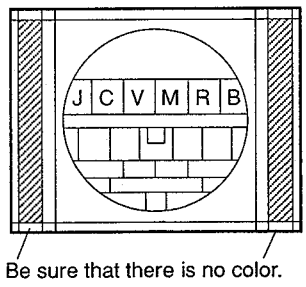


8-2-5. Anti-PAL adjustment

Signal	PAL SP Color-bar
Input terminal	S VIDEO
Measurement point	RGB VIDEO OUT connector
Measurement equipment	Monitor (RGB)
Adjustment element	RV103
Specified value	Be sure that there is no solor in the pattern as shown below.

Adjustment

Adjust RV103 so that there is no shading in the two anti-PAL portions, or so there is no color.

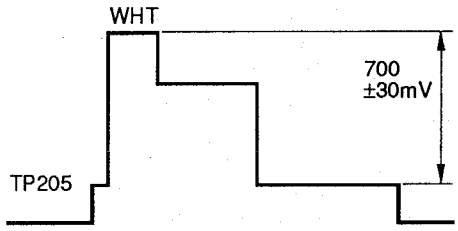


8-2-6. RGB output level adjustment

Signal	PAL 100% Color-bar
Input terminal	S VIDEO
Measurement point	TP205 (GND TP201)
Measurement equipment	Oscilloscope
Adjustment element	RV204
Specified value	700 ± 30 mV

Adjustment

1) Set the PICTURE VR on the front panel to the center click position and the BRIGHT VR to the 2 o'clock position.
2) Terminate the GREEN OUT pin of the RGB OUT connector in 75 ohms.
3) Adjust so that the white level of the waveform is 700 ± 30 mV.



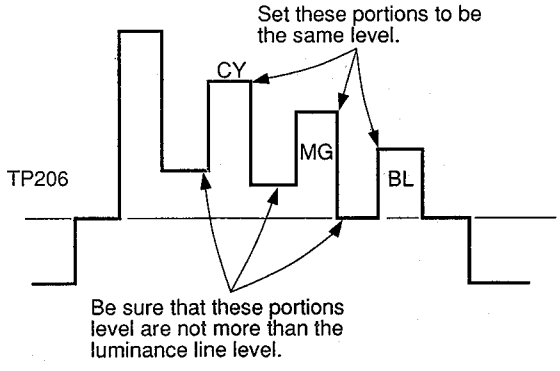
8-2-7. RGB balance adjustment

1. Blue adjustment

Signal	PAL 100% (white) Color-bar
Input terminal	S VIDEO
Measurement point	TP206 (GND: TP201)
Measurement equipment	Oscilloscope
Adjustment element	RV205
Specified value	Within ± 5%

Adjustment

1) Set the COLOR VR on the front panel to the center click position and the BRIGHT VR to the 2 o'clock position.
2) Adjust so that the level difference for cyan, magenta, and blue at TP206 is within ± 5%.

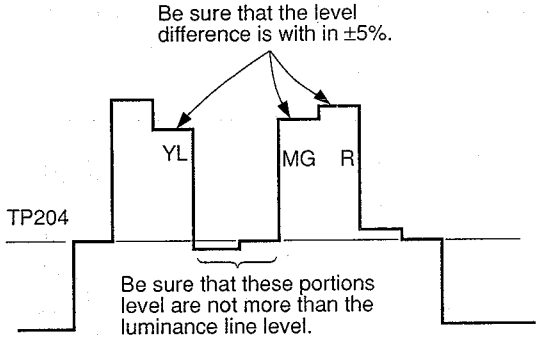


2. Red check

Signal	PAL 100% Color-bar
Input terminal	S VIDEO
Measurement point	TP204 (GND: TP201)
Measurement equipment	Oscilloscope
Adjustment element	Check
Specified value	Within ± 5%

Check

Check so that the level difference for yellow, magenta, and red at TP204 is within ± 5%.

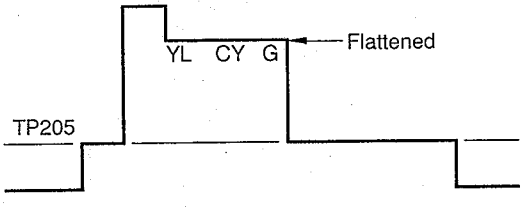


3. Green check

Signal	PAL 100% Color-bar
Input terminal	S VIDEO
Measurement point	TP205 (GND: TP201)
Measurement equipment	Oscilloscope
Adjustment element	Check
Specified value	Within ± 5%

Check

1) Set the COLOR VR on the front panel to the center click position and the BRIGHT VR to the 2 o'clock position.
2) Check so that the level difference for yellow, cyan, and green at TP205 is within ± 5%.

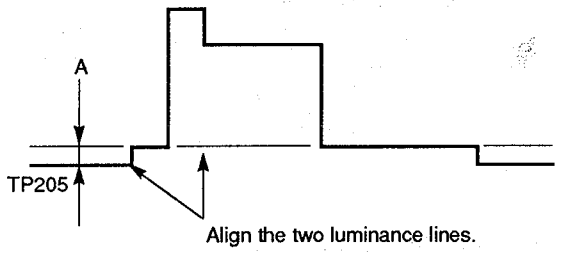


8-2-8. Bright VR adjustment

Signal	PAL Color-bar
Input terminal	S VIDEO
Measurement point	TP205 (GND: TP201)
Measurement equipment	Oscilloscope
Adjustment element	RV206
Specified value	A = 0

Adjustment

1) Set the BRIGHT VR on the front panel to the center click position.
2) Adjust so that the luminance lines are aligned.



8-3. Parts arrangement diagram for adjustments